CANADIAN PETROLEUM REQUIREMENTS FOR THE YEAR 2000

By

Nepean Development Consultants

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Beaufort Sea Alliance

46 Elgin Street, Room 11, Ottawa, Ontario, K1P 5K6 (613) 236-7709

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A Report Prepared for

BEAUFORT SEA ALLIANCE

by

NEPEAN DEVELOPMENT CONSULTANTS

Members

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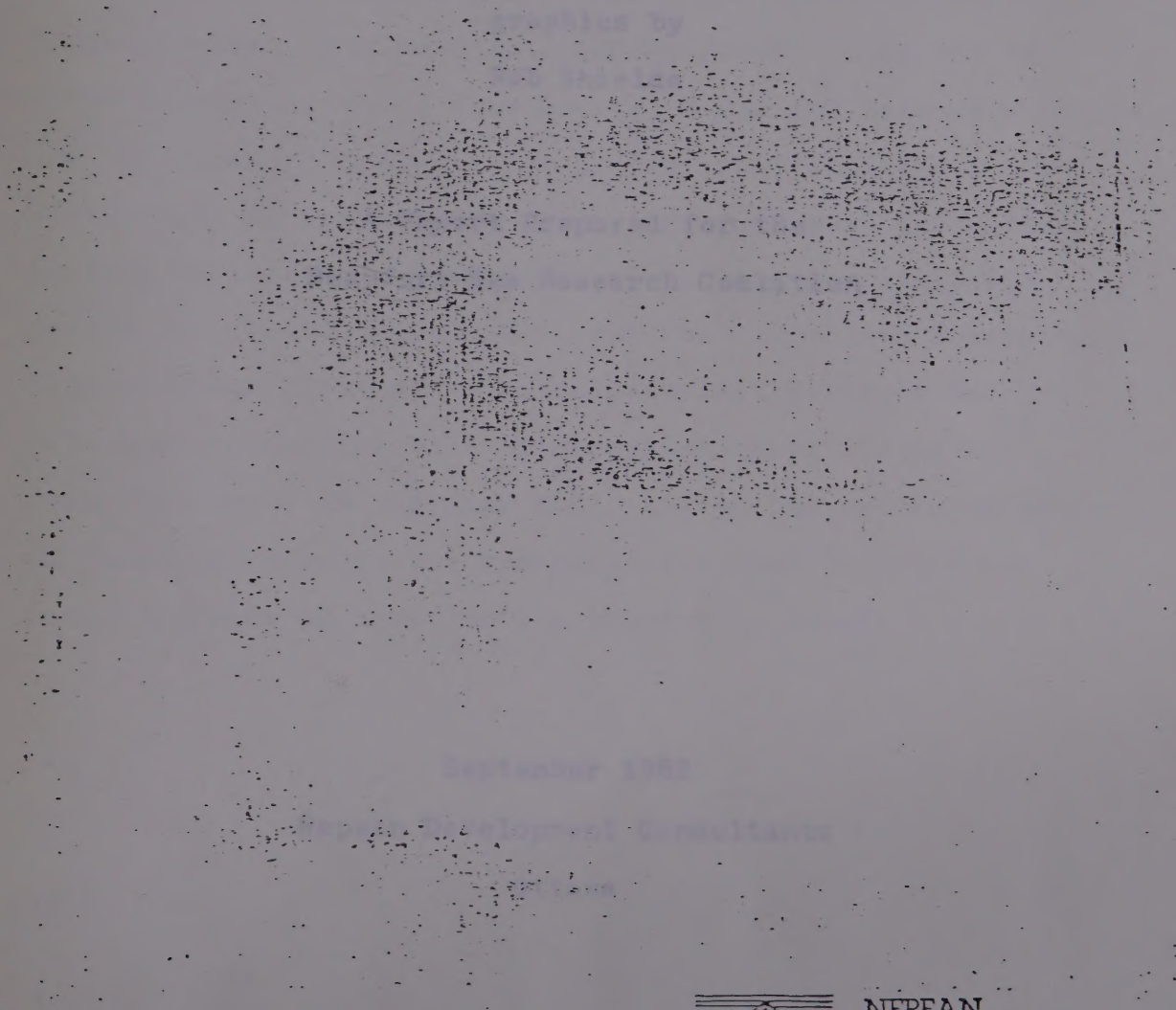

NEPEAN
DEVELOPMENT
CONSULTANTS

249 Nepean Street
Ottawa, Canada, K2P 0B7

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-William Sheridan-

graphics by

Rob Shields

A Report Prepared for the

Beaufort Sea Research Coalition

September 1982

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Ottawa

Summary

Forecasts of petroleum supply and/or demand for Canada in the year 2000 have recently been forthcoming from a number of reputable sources. These provide the basis for a comparison of production potential and consumer requirements. Each of these forecasts has been accepted as given. Only two of these forecasts (those from Energy, Mines and Resources Canada, and the National Energy Board's high case) anticipate the possibility of northern frontier (Beaufort Sea) production. In both instances however, such production possibilities exceed the demand projections from the respective forecasters. None of these forecasters anticipate that Beaufort Sea petroleum production will be needed to supply Canadian domestic demand in the year 2000. Given the declining nature of recent forecasts, the absolute reduction in petroleum demand appears to constitute a continuing trend.

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CANADIAN PETROLEUM FORECASTS FOR THE YEAR 2000

Forecasts of petroleum supply and/or demand for Canada in the year 2000 have recently been estimated by the National Energy Board (NEB), the Department of Energy, Mines and Resources (EMR), Hampshire Developments Limited (HDL), and Friends of the Earth (FOE), a public interest group. These forecasts cover the range of reputable projections, and provide the basis for a comparison of production potential and consumer requirements under various assumptions. For the purposes of this study, each of the forecasts has been accepted as given, so that those wanting to review any of the contingent assumptions or methodologies should refer to the material listed in the bibliography. To facilitate the comparison herein, the forecasts have all been converted to thermal units (based on an averaging of fuel values), and are expressed in petajoules (10^{15} joules).

The Demand classification utilized in Tables 1 and 8 is Refined Petroleum Products (RPP). The Supply classification utilized in Tables 2, 3, 4, 5, 6 and 7 is Crude Oil. During refining of crude oil, there is a volume loss of between 1% and 2%, but an aggregate heat value gain of between 5% and 8%. Hence the Supply forecasts can all be regarded as conservative with reference to heat value of end-use products. In terms of forecasting, demand is usually stated in RPP (as it is sold to consumers), while supply is stated in terms

of Crude Oil and Equivalents (as it is extracted from geological deposits).

Tables 1 and 2 give the aggregate forecasts for demand and supply in the year 2000. Figure I presents the data graphically, with vertical columns representing demand forecasts, and horizontal lines representing supply forecasts.

Tables 3, 4, 5, 6 and 7 disaggregate the supply forecast data into contributions from Frontier sources, Oil Sands and Conventional sources. Figure II presents a graphical depiction of this second set of statistics, with vertical columns representing supply forecasts, and horizontal lines representing demand forecasts. At Tables 5 and 7 indicate, and as Figure II shows, only two forecasts (those from EMR and the NEB Hi case) anticipate the possibility of northern frontier (Beaufort Sea) production. In each case however, such production possibilities exceed the demand projections from the respective forecasters. None of these forecasters anticipate that Beaufort Sea petroleum production will be needed to supply Canadian domestic demand in the year 2000.

The statistics in Table 8 are extensions to the year 2000 of previous NEB petroleum demand forecasts. Figure III represents the relative decline in these forecasts, which constitutes a trend to a zero growth rate, and then continues to a negative demand function.

TABLE 1

Demand for RPP

in Year 2000

Forecaster	Projections
NEB	4178 PJ
EMR	3390 PJ
HDL	2390 PJ
FOE hi	1412 PJ
FOE lo	971 PJ

TABLE 2

Supply of Crude Oil

in Year 2000

Forecaster	Projections
NEB hi	5230 PJ
NEB mod base	3970 PJ
EMR	3610 PJ
NEB base	1740 PJ
NEB lo	1320 PJ

FIGURE I

Comparison of Demand and Supply Forecasts

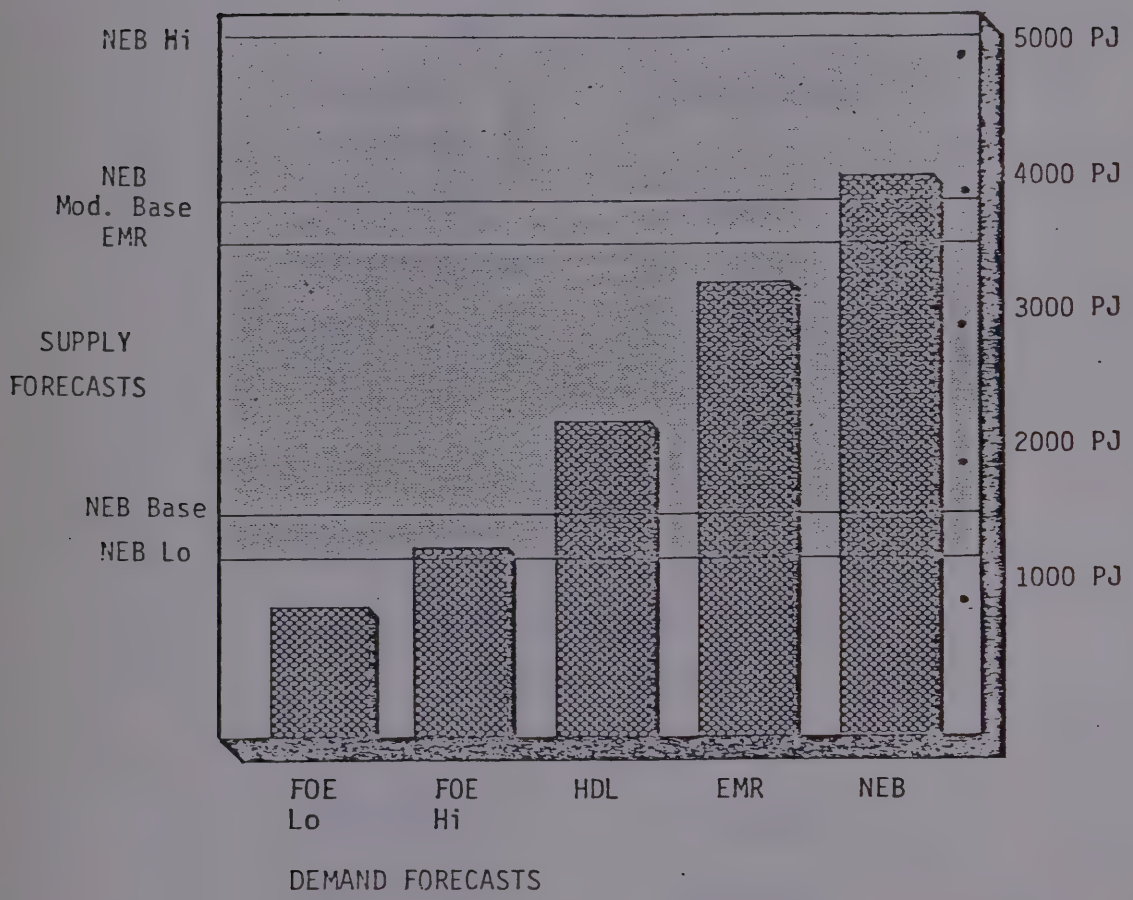


TABLE 3

Supply Sources for Crude Oil

in Year 2000

NEB lo Forecast

Source	Projections
Frontier	-
Oil Sands	485 PJ
Conventional	835 PJ
Total	1320 PJ

TABLE 4

Supply Sources for Crude Oil

in Year 2000

NEB base Forecast

Source	Projections
Frontier (eastern)	39 PJ
Oil Sands	479 PJ
Conventional	1222 PJ
Total	1740 PJ

TABLE 5

Supply Sources for Crude Oil

in Year 2000

EMR Forecast

Source	Projections
Frontier	
(eastern)	567 PJ
(northern)	113 PJ
Oil Sands	1118 PJ
Conventional	1812 PJ
Total	3610 PJ

TABLE 6

Supply Sources for Crude Oil

in Year 2000

NEB modified base Forecast

Source	Projections
Frontier	
(eastern)	209 PJ
Oil Sands	2297 PJ
Conventional	1464 PJ
Total	3970 PJ

FIGURE II

Contribution of Beaufort Sea Production to Potential Supply

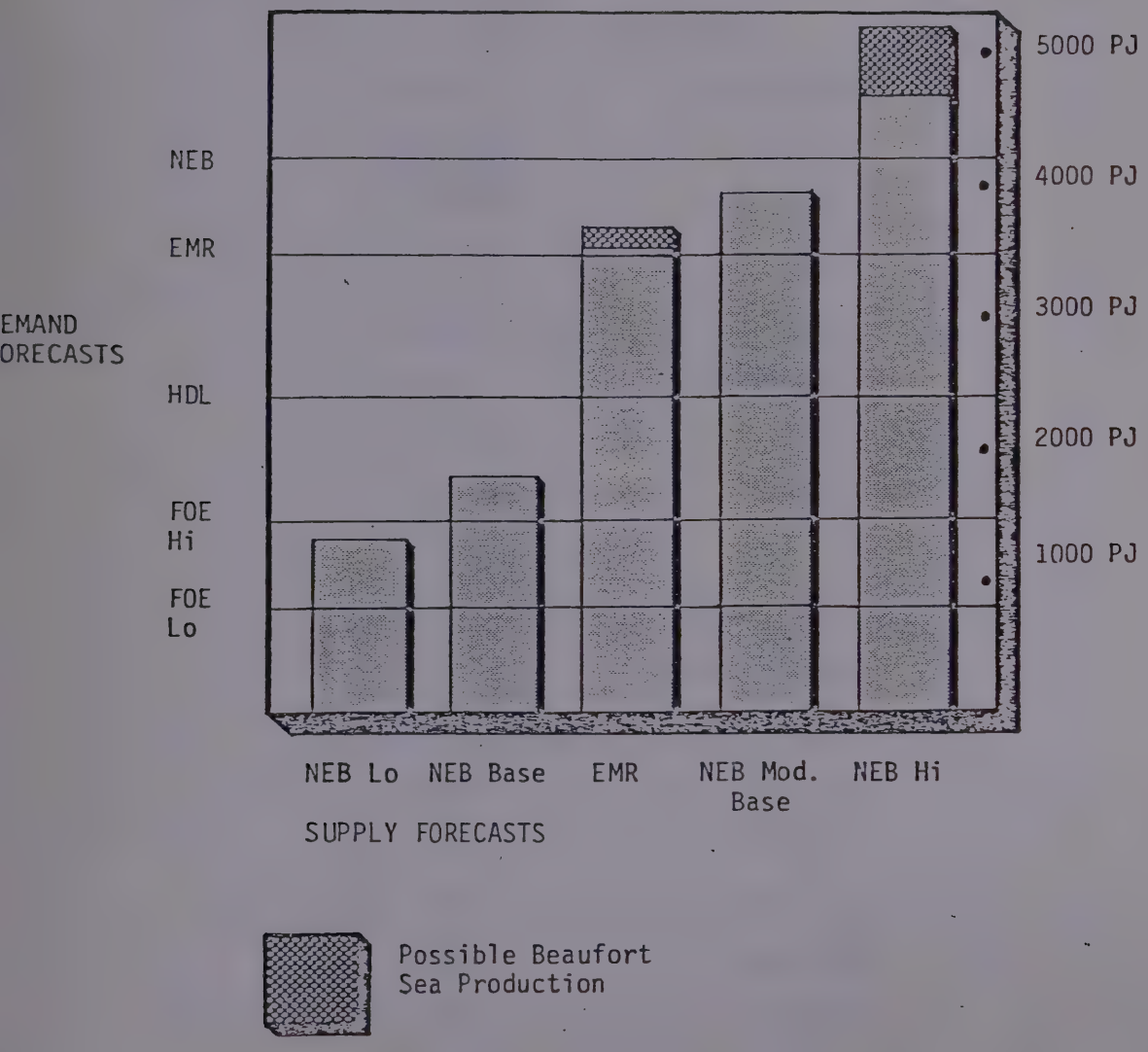


TABLE 7

Supply Sources for Crude Oil

in Year 2000

NEB hi Forecast

Source	Projections
Frontier	
(eastern)	453 PJ
(northern)	453 PJ
Oil Sands	2309 PJ
Conventional	3015 PJ
Total	5230 PJ

TABLE 8

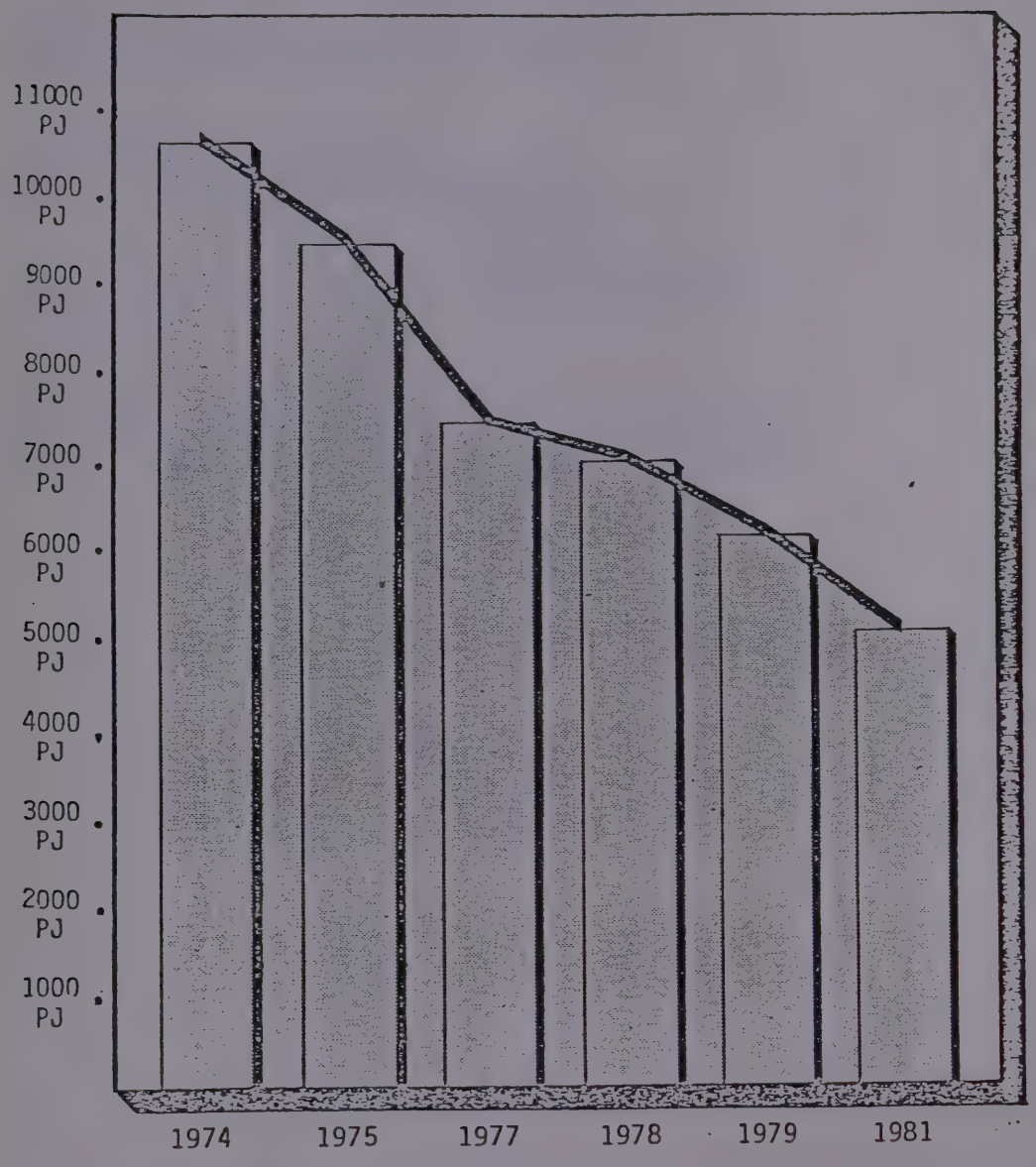
Extensions to the Year 2000 of

Previous NEB RPP Demand Forecasts

Year of Forecast	Projection to 2000
1974	11175 PJ
1975	8940 PJ
1977	6940 PJ
1978	6000 PJ
1979	5295 PJ
1981	4178 PJ

FIGURE III

Declining Trend in NEB Demand Forecasts for Year 2000.



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